



AMENDMENTS TO THE SPECIFICATION:

Please amend paragraph [0014], on page 7, as follows:

[0014] Despite the work reported in the field of membrane development, the need remains for the unique combination of materials and processes set forth in the several embodiments of the present invention, in which robust versatile membranes are provided ~~[[in]]~~ relatively simply and cleanly, using steps adapted from the microelectronics art.

Please amend paragraph [0024], starting at the bottom of page 11, as follows:

The embodiments shown in FIGS. 2-3 use a similar method to prepare the underlying silicon support for the separation layer. However, in the embodiments shown in FIGS. 2-3, the separation layers 3 and 4, respectively, need not be lithographically-patterned to produce a porous structure. The structure shown in FIG. 2 uses a thin organic film, such as a polymer, as separation layer 3 to separate molecules based on chemical affinity or permeability, supported by porous silicon support structure 2. In this embodiment, the thin film can be deposited by any of a number of methods known to those skilled in the art, such as chemical vapor deposition, plasma-enhanced chemical vapor deposition, and spin-on. Hence, small molecules such as N.sub.2 and O.sub.2 can be separated based on their

respective rates of permeation through the nonporous skin layer. Alternatively, molecules that have a chemical affinity for the particular organic thin film can adsorb and diffuse through the separation layer. In a preferred embodiment, a material highly permeable to certain organic molecules, trade named SilKTM, a crosslinked aromatic thermoset which is highly permeable to short chain aliphatic compounds and can separate organic contaminants from waste water, is used. Spin glass, such as siloxanes, silsesquioxanes, N-silsesquioxanes, and polycabosilanes also can be used to form a separation layer, as can polyimide, polysulfone, and polyethersulfone. To assure high throughput, the separation layer should be very thin, i.e. under one micron.